

### What Is Claimed Is:

1. A pharmaceutical composition for regulating bone-forming activity in a mammal comprising at least one of (i) a secreted frizzled related protein (sFRP) or regulating portion thereof (ii) an antibody against such proteins or portions thereof, (iii) a nucleic acid that encodes for either (i) or (ii); (iv) an sFRP antisense nucleic acid; or (v) a small molecule that has an effect on any of items (i)- (iv).

2. A pharmaceutical composition according to claim 1, wherein the sFRP is from human osteoblast cells.

3. A pharmaceutical composition according to claim 1, wherein the bone forming activity is the regulation of bone growth.

4. A pharmaceutical composition according to claim 1, wherein the bone forming activity is regulation of bone density.

5. The pharmaceutical composition according to claim 1, wherein the sFRP is sFRP-1.

6. The pharmaceutical composition of claim 1 wherein the composition comprises an acceptable carrier or diluent.

7. A method for treating a bone disorder in a mammal comprising the steps of administering a pharmaceutical composition as in claim 1.

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4 proliferate at temperatures exceeding about 37°C, when the T-antigen mutant is  
5 inactive.

1 15. The method of claim 14 wherein the immortalized human osteoblast cell is an  
2 hOB-01-C1-PS-09 cell, as deposited with American Type Culture Collection in  
3 Manassas, VA with the designation PTA-785, or progeny thereof.

1 16. A method of modulating Wnt-mediated signaling in a cell comprising  
2 contacting the cell with the composition of claim 1, wherein the Wnt activity is  
3 regulated.

1 17. The method of claim 16, wherein the sFRP of the composition is sFRP-1.

1 18. A method of facilitating bone formation or repair in a bone cell, comprising  
2 introducing a recombinant construct expressing an antisense, siRNA, shRNA  
3 sequence to a nucleotide sequence that encodes an sFRP-1 into bone cells.

1 19. A method of diagnosing a bone disease or disorder, the method comprising  
2 using a polynucleotide probe capable of hybridizing with the polynucleotide having  
3 the nucleic acid sequence set forth in SEQ ID NO: 1 to detect the presence or  
4 absence of an sFRP in a sample derived from a mammalian host.



5 animal relative to the sFRP -/- animal indicates the compound is a modulator of  
6 sFRP activity.

1 27. An immortalized human osteoblast (hOB) cell that expresses a temperature-  
2 sensitive mutant of simian virus 40 large T protein antigen, wherein the cell  
3 proliferates at about 34 °C but does not proliferate at temperatures exceeding about  
4 37 °C, when the T-antigen mutant is inactive.

1 28. An hOB cell of claim 27 that expresses a nucleotide sequence encoding a  
2 polynucleotide that encodes an sFRP or fragment thereof.

1 29. An hOB cell of claim 27 wherein the hOB is an hOB-01-C1-PS-09 cell, as  
2 deposited with American Type Culture Collection in Manassas, VA with the  
3 designation PTA-785, or progeny thereof.

1 30. A homogenous population of cells comprising the hOB cell of claim 27.

1 31. A method for preventing a bone disorder in a mammal, which method  
2 comprises administering a pharmaceutical composition as in claim 1.

1 32. The method of preventing a bone disorder according to claim 31, in which the  
2 disorder is a bone formation disorder, a bone resorption disorder or a bone density  
3 disorder.

1     33.     The method according to claim 31 in which the disorder is a degenerative  
2     bone disorder.

1      34.      The method according to claim 33 in which the degenerative bone disorder is  
2      an osteodegeneration disorders.

1 35. The method according to claim 34 in which the osteodegeneration disorder  
2 selected from the group consisting of osteopenia, osteoarthritis, and osteoporosis.

1      36.      The method according to claim 35 in which the disorder is Type II  
2      osteoporosis.

1      37.      A method according to claim 31 in which the mammal is a human.

1 38. A method according to claim 31 in which the pharmaceutical composition  
2 inhibits expression or activity of the sFRP in the mammal.

1 39. A method according to claim 38 in which the sFRP expression or activity is  
2 inhibited by at least 20%.

1      40.      A method according to claim 38 in which the sFRP expression or activity is  
2      completely eliminated in the mammal.

1 41. A method according to claim 7 in which the pharmaceutical composition  
2 inhibits expression or activity of the sFRP in the mammal.

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